



AIRBORNE WOOD ROT FUNGI DETECTION IN HOUSES DAMAGED BY SERPULA LACRYMANS

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/ CONTEXT

Since several years, outbreaks of wood decay fungi in homes are increased. Among this variety of fungi, *Serpula lacrymans* is considered as the most serious species because it causes severe damage in the built environment. Its mycelium can spread extensively on timber and other building materials, and fruiting bodies can grow and produce rusty red basidiospores (Fig.1). Although asthma due to the spores has been previously established, little is known about residents' exposure and potential health risks. To investigate the characteristics of this fungal contamination, bioaerosols were collected with the Coriolis μ from 40 rooms located in damaged houses.

/ MATERIALS

- Coriolis μ , sterile cones and 15mL of sterile collection liquid (Bertin Technologies, Ref.05237-1-202).
- Extraction kit for PCR.

/ PROTOCOL

- Sampling step : 300L/min, 10 min.
- Centrifugation and concentration.
- DNA extraction.
- PCR analysis.

/ CONCLUSION

The Coriolis μ air sampler allowed the collection and identification of wood rot fungi in indoor air by PCR.

These data could be useful to assess human exposure to wood-rotting basidiomycetes associated with the built environment and could contribute to study the effect of indoor air quality on respiratory health.

/ RESULTS

A total of 40 air samples were collected by Coriolis μ (Fig.2). *Serpula lacrymans* was detected in 12 samples. Other ligninolytic fungi were also identified from bioaerosols: *Donkioporia expansa* and *Serpula himantioides*, respectively in 7 and 1 samples. These results showed that several wood rotting species could be observed in damaged buildings.



Figure 1: Extensive spreading of *Serpula lacrymans* mycelium.

Figure 2: Air sampling with Coriolis μ in a room.

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